

independent form to include all of the limitations of the base claim and any intervening claims.

Brick et al. does not render Applicant's claimed invention obvious. A *prima facie* case of obviousness cannot be established unless there is some teaching, suggestion or motivation to modify the cited reference to produce the claimed invention. In re Fine, 5 USPQ2d 1596, 1599 (Fed. Cir. 1988); MPEP § 2143.01. Such teaching, suggestion or motivation must be found in the prior art, not in the Applicant's disclosure. Id.; In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). Moreover, such teaching or suggestion must teach or suggest all of the claim limitations of Applicant's invention. In re Royka, 180 USPQ 580 (CCPA 1974); MPEP § 2143.03. As discussed below, Brick et al. and the other prior art relied on by the Examiner do not meet these criteria.

Brick et al. is directed to a portable data terminal with a modular keypad. The keypad module 18 includes a substrate 52 having an array of keys 20 positioned on top of the substrate 52. In this configuration, the structure defines a space between the keys 20 that is bounded by an imaginary upper plane on the tops of the keys 20 and a lower plane on the bottoms of the keys 20. In the structure shown in Brick et al., this lower plane coincides with top of the substrate 52. In the embodiments shown in Figs. 5-9, a cable 92 is connected to the bottom of the substrate 52 and to a separate main circuit board 100, on which is mounted a processor 30 and other circuit components. None of these embodiments show circuit components disposed in the space between the keys 20 bounded by the tops of the keys 20 and the bottoms of the keys 20. In the embodiment, shown in Fig. 9, a keyboard component (keyboard scanning circuit 68) is mounted to the bottom of the substrate 52. Again, however, this component is not disposed in the space between the keys 20 bounded by the tops of the keys 20 and the bottoms of the keys 20. Moreover, this component is not a processor or other non-keyboard component.

Brick et al. does not teach or suggest the keyboard of claims 10-18. Claims 10-18 recite a keyboard comprising a plurality of keys, each of which has a key structure and a keyboard structure holding the plurality of keys in place relative to one another and defining a space between the key structures of at least two of the plurality of keys. A computer component, other than a keyboard component, is at least partly disposed in the space between the key structures. In contrast, Brick et al. teaches mounting components outside of the space between the key structures, as discussed above. Nowhere does Brick et al. suggest mounting components within this space between the key structures.

Brick et al. does not disclose or teach the keyboard of claims 19-27. Each of claims 19-27 recites a computer system comprising a central processing unit, output means for outputting data from the computer and a keyboard. The keyboard includes a plurality of keys, with each key including a key structure. A keyboard structure holds the plurality of keys in place relative to one another and defines a space between the key structures of at least two of the plurality of keys. A computer component, other than a keyboard component, is at least partly disposed in the space between the key structures. Again, this is in contrast to the modular keypad of Brick, et al., which teaches mounting components outside of the space between the key structures rather than mounting components within this space.

Brick et al. does not disclose or teach the keyboard of claims 28-36. Each of claims 28-36 recites a keyboard that includes a plurality of keys and a keyboard structure for holding the plurality of keys in place relative to one another. Each key of the plurality of keys has a key structure supporting a key cap. The key structures and the key caps of the plurality of keys define a section key space, and a computer component, other than a keyboard component, is least partly disposed in the section key space. Again, this is in contrast to the modular keypad of Brick, et al., which teaches mounting components outside of the space between the key structures.

Brick et al. does not disclose or teach the keyboard of claims 37-52. Each of claims 37-52 recites a keyboard that includes a plurality of keys and a keyboard structure holding the plurality of keys in place relative to one another. Each key includes a key structure and a key cap. The key structures and the key caps of the plurality of keys define a section undepressed key capless key space. A computer component, other than a keyboard component, is at least partly disposed in the section undepressed key capless key space. In contrast, the modular keypad of Brick, et al., teaches mounting components outside of the section undepressed key capless key space.

Applicant further submits that Brick et al. does not disclose or teach the keyboard of claims 53-68. Each of claims 53-68 recites a keyboard having a plurality of keys and a keyboard structure holding the plurality of keys in place relative to one another. Each key includes a key structure and a key cap. The key structures and the key caps of the plurality of keys define a bounding key set undepressed key capless space. A computer component other than a keyboard component, the computer component being at least partly disposed in the bounding key set undepressed key capless space. Brick, et al., on the other hand, teaches mounting components outside of the bounding key set undepressed key capless space.

The Examiner argues that Brick et al. teaches the need for reduction in size of computers and computer products. The Examiner concludes, based on that need, that it would be obvious for one of ordinary skill in the art to modify Brick et al. to maximize the use of "extra space" in electronic devices or computers. The Applicant respectfully suggests that this argument is insufficient to establish obviousness.

As discussed above, obviousness cannot be established unless there is some teaching, suggestion or motivation to modify the reference to produce the claimed invention. In re Fine, 5 USPQ2d 1596, 1599 (Fed. Cir. 1988); MPEP § 2143.01. In the office action, the Examiner appears to rely on an argument that the motivation to modify Brick et al. is based on a need, which the Examiner states is well known in the art, to

reduce the size of computers. This is an insufficient basis, however, upon which to establish *prima facie* obviousness for several reasons.

First, the Examiner appears to have improperly relied only on the level of skill in the art for finding a suggestion to modify Brick et al. to produce the claimed invention. The mere fact that the claimed invention is within the capabilities of one of ordinary skill in the art is insufficient by itself to establish *prima facie* obviousness. MPEP § 2143.01. Thus, the level of skill in the art cannot be relied upon alone to provide the suggestion or motivation to modify a reference without some objective reason to do so. See Al-Site Corp. v. VSI International, Inc., 50 USPQ2d 1161, 1171 (Fed. Cir. 1999).

In effect, the Examiner reaches a conclusion that it would have been “obvious to try” the claimed invention, which is an unacceptable basis for rejection. In re Fine, 5 USPQ2d at 1598. An “obvious to try” situation exists where the prior art gives only general guidance that may pique an inventor’s further investigation to achieve a desired result, but does not teach how to obtain that result. See In re Eli Lilly & Co., 14 USPQ2d 1741 (Fed. Cir. 1990). Such a situation cannot support a finding of obviousness. MPEP § 2145. Thus, the Applicant’s invention is not rendered obvious simply because one of ordinary skill in the art may have been motivated to try to reduce the size of a computer, when the prior art provides no teaching about doing so by utilizing the space between the keys of the keyboard, as Applicant has done.

Second, even if a motivation to modify Brick et al. to reduce the size of a computer existed, a finding of obviousness requires that all claim limitations of the Applicant’s invention must be taught or suggested by the prior art. In re Royka, 180 USPQ 580 (CCPA 1974); MPEP § 2143.03. Here, however, there is no teaching or suggestion whatsoever in the art of record that teaches utilizing the space between key structures to locate components that are not keyboard components. Only the Applicant’s disclosure teaches such a use of this space. It is inappropriate, however, for the Examiner to rely on the benefit of the hindsight vision afforded by the Applicant’s

disclosure. See Al-Site Corp. v. VSI International, Inc., 50 USPQ2d 1161, 1171 (Fed. Cir. 1999); MPEP § 2142.

Third, there is significant objective evidence in the record from which to conclude that Applicant's invention is not obvious. For example, proceeding contrary to accepted wisdom in the art is evidence of nonobviousness. In re Hedges, 228 USPQ 685, 687 (Fed. Cir. 1986); MPEP § 2145. The prior art of record in this matter illustrates that the accepted wisdom for locating computer components other than keyboard components is to locate those parts outside of the space between the key structures of the keyboard. Brick et al. is one example that reflects this accepted wisdom; even though Brick et al. shows space between the key structures that, by the Examiner's reasoning, could have been used to accept computer components, the inventors failed to recognize that locating the components between the keys could provide a solution for reducing the size of the computer. Only Applicant has located such components, contrary to the accepted wisdom, in the space between the key structures of the keyboard and not outside of that space.

Similarly, the objective evidence suggests that Applicant's invention satisfies a long-felt need and therefore that the invention is nonobvious. The Examiner has concluded that the need to reduce the size of computers is well known in the art. Notwithstanding this need, however, none of the art of record teaches locating computer components other than keyboard components in the space between the key structures of the keyboard to reduce the size of the computer. Such evidence of a long-felt, yet unsatisfied need, weighs in favor of finding that Applicant's invention is not obvious, and this evidence must be considered. MPEP §§ 716.01(a), 716.04.

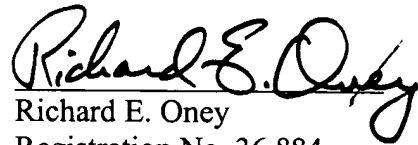
Applicant respectfully submits, therefore, that the objective evidence demonstrates that Applicant's invention is not obvious.

For the foregoing reasons, Applicant submits that the claims 10-68 are neither anticipated by nor obvious in view of the art of record. Applicant therefore requests reconsideration and allowance of these claims.

The Examiner is invited to telephone the Applicant's undersigned attorney at (602) 916-5303 if this would in any way facilitate prosecution of the application.

Dated: April 11, 2002

Respectfully submitted,

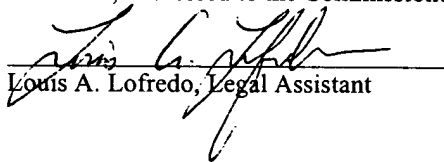


Richard E. Oney
Registration No. 36,884
FENNEMORE CRAIG
3003 North Central Avenue
Suite 2600
Phoenix, Arizona 85012
Tel: (602) 916-5303

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Louis A. Lofredo, Legal Assistant

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